UFO UpDates Mailing List

Re: Zeta Notso Ridiculous

From: **Mark Cashman <mcashman@ix.netcom.com>**
Date: Tue, 16 Sep 1997 12:04:59 -0700
Fwd Date: Tue, 16 Sep 1997 18:03:15 -0400
Subject: Re: Zeta Notso Ridiculous

> From: UFO UpDates - Toronto <updates@globalserve.net>, on 9/15/97 12:24 PM:
> Date: Sun, 14 Sep 1997 04:49:50 -0700
> From: Loy Pressley <lpressle@webwide.net>
> To: UFO UpDates - Toronto <updates@globalserve.net>
> Subject: Re: UFO UpDate: Re: Zeta Notso Ridiculous

> > To: UFO UpDates - Toronto <updates@globalserve.net>
> > From: Mark Cashman <mcashman@ix.netcom.com>
> > Subject: re: UFO UpDate: Re: Zeta Notso Ridiculous
> > Date: Wed, 10 Sep 1997 12:15:00 -0700

> > > Date: Wed, 10 Sep 1997 06:42:25 -0700
> > > From: Loy Pressley <lpressle@webwide.net>
> > > To: UFO UpDates - Toronto <updates@globalserve.net>
> > > Subject: Re: UFO UpDate: Re: Zeta Notso Ridiculous

> However; I don't think that we know everything about everything...just
> because our science today puports to have absolute proof that something
> must be so doesn't mean that, in fact, it is so. It is just the best
> idea that we have at the time.

I think it's a little more complex than that. Science is a highly interlocking
edifice of interdependent ideas and their proofs. Each piece of the
edifice depends on many others. As the number of dependent components
increase, the "depended-on" component is established more solidly as
truth.

Down at the base of science are some axiomatic concepts which are
required if science is to work, and which cannot be contradicted except
by using them. These include the existence of an objective reality, and the
existence of consciousness within an objective reality. These are axiomatic
because you don't and can't prove them. That doesn't mean they rest
on faith, it means that you need them to disprove them. In other words,
if objective reality doesn't exist, then there's nothing to prove, because
there's nothing there.

In the core of science are concepts which have been proven by direct
experiement or by dependent experiments so many times, that we know
they must be as close to truth as human intellect has been able to
approach. Even when a new concept comes along, it may subsume
this basic concept, but it will not contradict it. For instance, Einsteinian
gravitational theory, within the local frame of reference makes
exactly the same predictions as Newtonian gravity. It is only in
unusual regimes that it addresses reality in a fashion better than
Newtonian gravity, and those areas had not even been experienced
when Einstein developed his theories - and certainly had not been
experienced by Newton.

This is as true of biology as it is in physics, but biological systems are

many, many orders of magnitude more complex that the systems in physics. Investigation of those systems is also more difficult.

It probably would be fair to say that we have a less deep understanding of biology than of physics. But that does not mean we do not understand biology, nor does it mean that we do not understand enough about biology to be able to understand what is needed for living systems to come into existence, to evolve, and to develop a certain level of complexity.

Chemistry is key to understanding the constraints on ET life, and systems of life which might be "not as we know it". The chemicals used in terrestrial life are known to be common throughout the cosmos. They have specific properties which make them good chemicals for creating and evolving life. Other chemicals are unlikely to be as directly useful. because their properties don't serve the requirements of life, or because they are uncommon.

> Suppose, for example, that it turns out in the end that the conditions
> we experience in this remote arm of an unremarkable galaxy where we live
> are not the same conditions that exists in other parts of the universe.
> Suppose that the speed of light isn't constant everywhere...if that
> turns out to be true it would certainly answer the current question of
> why we see stars that appear to be older than the universe itself.

The likelier explanation is errors in the measurement system. At this point, there is no credible evidence in astronomy or physics that basic properties of the universe differ from one place to another. Theories of light speed variation, "tired light" local gravitational constant variations, etc, have all been proposed to account for various observations, but none have yet stood to the test.

In any event, if life were dependent on such localized conditions, it would, of course, die when it left those localized conditions.

> What are the properties of carbon compounds that are not shared by other
> chemicals?

Carbon compounds most easily form repeating sequences which are tolerant of heat / cold, radiation, etc. Repeating sequences are essential to life (i.e. DNA / RNA strands, cell wall polymers, cell membranes, etc). Carbon combines well with others of the most common chemicals of the universe (hydrogen, oxygen, nitrogen) to create more complex compounds, and most of those reactions can occur at a wide variety of temperatures and pressures.

> Are these unique properties true under all conditions? What happens to
> chemistry when it evolves on a planet that is larger or smaller than
> earth, has a completely different atmosphere than earth, and orbits a
> binary or even a trinary star system in a matter of days or in hundreds
> of years?

These would not affect atomic properties.

> Would carbon compounds be the only compounds with those
> specific properties if they were on Jupiter? I don't think we have ever
> even seen the metallic hydrogen that is supposed to exist at Jupiter's
> core much less have any idea what happens to chemical compounds at the
> pressure and immense gravity there.

Well, there is _some_ knowledge of what happens in those conditions.

The major problem is that such pressures tend to destroy ALL compounds - by breaking them into constituent elements.

Thus, life, which is dependent on complexity, is unlikely to evolve under those conditions.

> I think our science is prejudiced towards 'life as we know it'.
> Granted; not much progress can take place if we don't have a well
> anchored starting point and our science is about the best starting point
> we can have. But...our scientific principals may not hold up under all
> circumstances and we need to be aware of that and not be so attached to
> them that we are unwilling to change.

It's not a question of being unwilling to change. As I said in an earlier post, evidence of life thriving in a heretofore unexpected environment, or utilizing a heretofore unknown biochemistry would be a discovery of the first order and would cause scientists the world over to engage in projects to understand it. A good example are the forms of life found near black smokers, which are currently the object of intense research.

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>  What is the currently accepted definition of life?  I've read quite a
>  few books and there seems to be a lot of disagreement among the experts
>  as to what 'alive' really means.

I think the basic characteristics of life are fairly well agreed on:

a) Maintains its integrity
b) Reproduces
c) Utilizes products of the environment for growth and repair
d) Excretes waste products

It's only when you get into things at the edges, like viruses, that there
are difficulties, but I have no problem with not considering viruses ex vitro
to not be alive.

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